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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,342

12/09/2005

Yuichiro Miyamae

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EXAMINER

PERRY, ANTHONY T

ART UNIT

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2879

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,342	<b>Applicant(s)</b> MIYAMAE ET AL.	
	<b>Examiner</b> ANTHONY T. PERRY	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/09/05, 3/26/07</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5-6, 8, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokosawa et al. (US 2002/0041145).

Regarding claim 1, Yokosawa et al. disclose a plasma display device (11) provided with a plasma display panel comprising a plurality of columns of discharge cells (14) having one of a single color and multiple colors, and a phosphor layer (15) disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays, wherein the phosphor layer includes a green color phosphor comprising at least one kind selected from among phosphor materials defined by general formulae of  $M_{1-a}(Ga_{1-x}Al_x)_2O_4:Mn_a$  (where "M" denotes one of Zn, Mg, Ca and Sr),  $(Y_{1-a-y}Gd_y)(Ga_{1-x}Al_x)_3(BO_3)_4:Tb_{sub.y}$ ,  $(Y_{1-a-y}Gd_y)(Ga_{1-x}Al_x)_3(BO_3)_{sub.4}:Ce_y, Tb_y$ ,  $(Y_{1-a-y}Gd_y)BO_3:Tb_y$ , and  $(Y_{1-a-y}Gd_y)_3(Ga_{1-x}Al_x)_5O_{12}:Tb_y$  (for example, see Fig. 2 and paragraphs 0008 and 0016-0019).

Regarding claim 2, Yosokawa discloses a plasma display device (11) provided with a plasma display panel comprising a plurality of columns of discharge cells (14) having one of a single color and multiple colors, and a phosphor layer (15) disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays, wherein the phosphor layer includes a green color

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phosphor comprising a mixture of a phosphor material defined by a general formula of  $M_{1-a}(Ga_{1-x}Al_x)_2O_4:Mn_a$  (where "M" denotes one of Zn, Mg, Ca and Sr) and one of phosphor materials defined by general formulae of  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_3(BO_3)_4:Tb_y$  and  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_3(BO_3)_4:Ce_y, Tb_y$  (for example, see Fig. 2 and paragraphs 0008 and 0016-0019).

Regarding claims 5 and 8, Yosokawa discloses the plasma display device, wherein values "a" and "x" in the general formula of  $M_{1-a}(Ga_{1-x}Al_x)_2O_4:Mn_a$  (where "M" denotes one of Zn, Mg, Ca and Sr) are within ranges of  $0.01 \leq a \leq 0.06$  and  $0.1 \leq x \leq 1$  respectively (for example, see paragraphs 0016-0019).

Regarding claims 6 and 11, Yosokawa discloses the plasma display device, wherein values "a", "x" and "y" in any of the general formulae of  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_3(BO_3)_4:Tb_y$  and  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_3(BO_3)_4:Ce_y, Tb_y$  are within ranges of  $0 \leq a \leq 1$ ,  $0.1 \leq x \leq 1$  and  $0.02 \leq y \leq 0.4$  respectively (for example, see paragraphs 0016-0019).

Claims 3, 7, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Bechtel et al. (US 2002/0113542).

Regarding claim 3, Bechtel et al. disclose a plasma display device provided with a plasma display panel comprising a plurality of columns of discharge cells having one of a single color and multiple colors, and a phosphor layer (10) disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays (12), wherein the phosphor layer includes a green color phosphor comprising a mixture of a phosphor material defined by a general formula of  $M_{1-a}(Ga_{1-x}Al_x)_2O_4:Mn_a$  (where "M" denotes one of Zn, Mg, Ca and Sr) and another phosphor material defined by a general formula of  $(Y_{1-a-y}Gd_a)BO_3:Tb_y$  (for example, see Fig. 1 and paragraph 0042).

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Regarding claim 7, Bechtel discloses a plasma display device provided with a plasma display panel comprising a plurality of columns of discharge cells having multiple colors, and a phosphor layer (10) disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays (12), wherein the phosphor layer includes any of a green color phosphor, a blue color phosphor and a red color phosphor, the green color phosphor comprises one of a spinel group phosphor, a yttria group phosphor and a mixture of the spinel group phosphor and the yttria group phosphor, the blue color phosphor comprises one of phosphor materials of  $\text{BaMgAl}_{10}\text{O}_{17}:\text{Eu}$  and  $\text{BaSrMgAl}_{10}\text{O}_{17}:\text{Eu}$ , and the red color phosphor comprises one of phosphor materials of  $\text{Y}_2\text{O}_3:\text{Eu}$  and  $(\text{Y}, \text{Gd})\text{BO}_3:\text{Eu}$  (for example, see Fig. 1 and paragraphs 0041-0043).

Regarding claim 9, Bechtel teaches the plasma display, wherein values "a" and "x" in the general formula of  $\text{M}_{1-a}(\text{Ga}_{1-x}\text{Al}_x)_2\text{O}_4:\text{Mn}_a$  (where "M" denotes one of Zn, Mg, Ca and Sr) are within ranges of  $0.01 \leq a \leq 0.06$  and  $0.1 \leq x \leq 1$  respectively (for example, see paragraph 0042).

Claims 4 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueda et al. (JP 10-088126).

Regarding claim 4, Ueda et al. disclose a plasma display device provided with a plasma display panel comprising a plurality of columns of discharge cells having one of a single color and multiple colors, and a phosphor layer disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays, wherein the phosphor layer includes a green color phosphor comprising a mixture of a phosphor material defined by a general formula of  $\text{M}_{1-a}(\text{Ga}_{1-x}\text{Al}_x)_2\text{O}_4:\text{Mn}_a$  (where "M" denotes one of Zn, Mg, Ca and Sr) and another phosphor material defined by a general formula of  $(\text{Y}_{1-a-y}\text{Gd}_a)_3(\text{Ga}_{1-x}\text{Al}_x)_5\text{O}_{12}:\text{Tb}_y$  (for example, see paragraph 0014).

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Regarding claim 10, Ueda et al. teach the plasma display device, wherein values "a" and "x" in the general formula of  $M_{1-a}(Ga_{1-x}Al_x)_2O_4:Mn_a$  (where "M" denotes one of Zn, Mg, Ca and Sr) are within ranges of  $0.01 \leq a \leq 0.06$  and  $0.1 \leq x \leq 1$  respectively (for example, see paragraph 0014).

### Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is **(571) 272-2459**. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 2879  
March 30, 2008

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